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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|-----------------------|---------------------|------------------|
| 10/673,537 | 09/29/2003 | Nicholas F. DiCamillo | 13024US01 | 1847 |
| 23400 | 7590 | 04/19/2007 | EXAMINER | |
| POSZ LAW GROUP, PLC 12040 SOUTH LAKES DRIVE SUITE 101 RESTON, VA 20191 | | | GREY, CHRISTOPHER P | |
| | | ART UNIT | PAPER NUMBER | |
| | | 2616 | | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 04/19/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | |
|------------------------------|---------------------|------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/673,537 | DICAMILLO ET AL. |
| | Examiner | Art Unit |
| | Christopher P. Grey | 2616 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 29 September 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-33 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1 and 20 are objected to because of the following informalities:

Claims 1 and 20 define a filter function arranged to decrease signals outside a second bandwidth, as disclosed in lines 4-5. The examiner objects to the use of the word, "outside" and requests that a proper substitute be added. Example, greater than, less than.

Claims 28 is objected to because of the following informalities:

Claim 28 line 1 states, "The apparatus method...". The word, "method" should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 and 5-33 are rejected under 35 U.S.C. 102 (b) as being anticipated by Tang (US 5016242).

Claim 1, 12, 20, 27 Tang discloses defining a filter function arranged to decrease signals outside a second bandwidth, the second bandwidth being less than the first bandwidth (**fig 2 depicts a four way power divider that divides and distributes the**

incoming signal; fig 2 also depicts the output of the 4 way power divider being sent to a number of filters, hence some form of filter function is present).

Tang discloses replicating (Col 3 lines 11-13, **replicate spectrums**) the input signals comprising a third bandwidth that is a multiple of the second bandwidth to generate a number of replicated signals corresponding to the multiple (**fig 2 depicts a two way power divider replicating the input and distributing signals**).

Tang discloses filtering the replicated signals according to the filter function to generate filtered signals (**fig 2 depicts narrowband filters used to filter the power divided signals**).

Tang discloses generating the output signal in response to the filtered signals (**fig 3 depicts the multiplexer multiplexing the filtered signals discussed above, and forming an output signal**).

Claim 2, 13, 21, 28 Tang discloses wherein the filter function defines a plurality of center frequencies including a predetermined center frequency applicable at the time the filter function filters one of the replicated signals and wherein the one replicated signal includes the predetermined center frequency (Col 4 lines 49-51).

Claim 3, 14, 22, 29 Tang discloses wherein the plurality of center frequencies are separated by substantially equal frequencies (Col 4 lines 49-51, **1.9 GHZ, 2.1 GHZ, 2.3 GHZ...**).

Claim 5 Tang discloses providing a plurality of hardware filters (**fig 1, 16, f0-fn**).

Claim 6, 15 Tang discloses wherein said input signals further comprise signals comprising the second bandwidth and wherein said filtering comprises filtering the

signals comprising the second bandwidth according to the filter function to generate filtered signals (**fig 2, sheet 1 of 2 depicts signals 23, 24 and 25 entering the filters without entering the 2 way power divider**).

Claim 7, 16, 23, 30 Tang discloses wherin replicating comprises power dividing (**see power dividers in fig 2, sheet 1 of 2**).

Claim 8, 17, 24, 31 Tang discloses noise filtering (**19-21, filtering channel interference**).

Claim 9, 18, 25, 32 Tang discloses bandpass filtering wherein the pass band comprises the second bandwidth (**fig 2, 11 and related description**).

Claim 10 Tang discloses said generating comprising combining the filtered signals into the output signal (**fig 3 depicts the multiplexer combining a number of signals to form an output signal**).

Claim 11, 19, 26, 33 Tang discloses wherein the first bandwidth comprises the sum of the bandwidths of the input signals (**fig 2 uses power combiners/summers in order to formulate the output signal**).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being obvious over Tang (US 5016242).

Claim 4 Tang discloses a modulation process occurring between narrowband filtering and channel filtering as disclosed in fig 3.

Tang does not specifically disclose storing instructions for a software algorithm.

It would have been obvious to one of the ordinary skill in the art at the time of the invention that the modulation involves implementing some form of software, where it is understood in the art that software must be stored in order to be implemented.

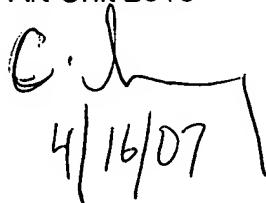
Furthermore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to combine software instructions to the implementation of the filters, where software instructions can allow the setting of cutoff and center frequencies easier.

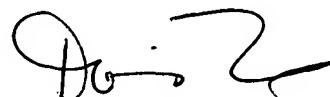
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Grey whose telephone number is (571)272-3160. The examiner can normally be reached on 10AM-7:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (571)272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher Grey
Examiner
Art Unit 2616


4/16/07



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SUPERVISORY PATENT EXAMINER
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